

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Gordon P. KURTENBACH et al.

Application No.: New

Group Art Unit: 2674

Filed: April 23, 2004

Examiner: Jennifer Nguyen

For: THREE DIMENSIONAL VOLUMETRIC DISPLAY INPUT AND OUTPUT
CONFIGURATIONS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure provisions of 37 CFR § 1.56, there is hereby provided certain information which the Examiner may consider material to the examination of the subject U.S. patent application. It is requested that the Examiner make this information of record if it is deemed material to the examination of the subject application.

1. Enclosures accompanying this Information Disclosure Statement are:

- 1a. ☒ Form PTO-1449.
- 1b. ☐ Copies of IDS citations.
- 1c. ☐ An English language copy of search report(s) from a counterpart foreign application or a PCT International Search Report.
- 1d. ☐ English language translation (complete or relevant portion(s)) attached to each non-English language publication.
- 1e. ☐ Explanations of Relevancy of References (ATTACHMENT 1(e), hereto) for providing a concise explanation of each non-English publication.
- 1f. ☐ List of Copending Applications (ATTACHMENT 1(f), hereto).
- 1g. ☐ List of Additional Submitted Documents (ATTACHMENT 1(g), hereto).

2. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(b):

(Check either Item 2a or 2b or 2c or 2d)

- 2a. ☐ Within three months of the filing date of a national application other than a Continued Prosecution Application under § 1.53(d);
- 2b. ☐ Within three months of the date of entry of the national stage as set forth in § 1.491 in an international application.
- 2c. ☐ Before the mailing of a first Office Action on the merits; or
- 2d. ☐ Before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.

3. ☐ This Information Disclosure Statement is filed under 37 CFR § 1.97(c) after the period specified in paragraph 2 above but before the mailing date of any of a Final Office Action under § 1.113, a Notice of Allowance under § 1.311 or an action that otherwise closes prosecution in the application, AND

(Check either Item 3a or 3b; Item 3b to be checked if any reference known for more than 3 months)

- 3a. ☐ The §1.97(e) Statement in Item 5 below is applicable; OR
 3b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:
☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

4. ☐ This Information Disclosure Statement is filed under 37 CFR §1.97(d) after the period specified in paragraph 3 above, but on or before payment of the Issue Fee, AND

- 4a. ☐ The § 1.97(e) Statement in Item 5 below is applicable; AND
 4b. ☐ The \$180.00 fee set forth in 37 C.F.R. §1.17(p) is:
☐ enclosed.
☐ to be charged to Deposit Account No. 19-3935.

5. ☐ Statement under § 1.97(e) (*applicable if Item 3a or Item 4a is checked*)

(Check either Item 5a or 5b)

- 5a. ☐ In accordance with 37 CFR § 1.97(e)(1), it is stated that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
 5b. ☐ In accordance with 37 CFR § 1.97(e)(2), it is stated that no item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known by any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

6. ☒ This is a continuation/divisional/continuation-in-part application under 37 CFR § 1.53(b).

(Check appropriate Items 6a and/or 6b)

- 6a. ☒ Copies of the publications listed on the attached Form PTO-1449 which were previously cited in prior application Serial No. 10/183,970, filed on June 28, 2002, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. § 120, have been omitted pursuant to 37 CFR § 1.98(d).
 6b. ☐ Copies of the publications listed on the attached Form PTO-1449 which were not previously cited in prior application Serial No. ___, filed on ___, and which is relied on for an earlier effective filing date for the subject application under 35 U.S.C. § 120, are provided herewith.

7. ☐ This is a continuation/divisional application under 37 CFR § 1.53(d) or a Request for Continued Examination under 37 CFR 1.114.
(Check either Item 7a or 7b)
- 7a. ☐ The Issue Fee has not been paid.
- 7b. ☐ A Petition to Withdraw from issue under 37 CFR § 1.313(c) is filed concurrently herewith or has been granted. A continuation/divisional application under 37 CFR § 1.53(d) or a Request for Continued Examination under 37 CFR 1.114, after payment of the Issue Fee, is proper in accordance with 37 CFR § 1.53(d)(1)(ii) or 37 CFR 1.114(a), respectively.
8. ☐ This is a Supplemental Information Disclosure Statement.
(Check either Item 8a or 8b)
- 8a. ☐ This Supplemental Information Disclosure Statement under 37 CFR § 1.97(f) supplements the Information Disclosure Statement filed on _____. A bona fide attempt was made to comply with 37 CFR § 1.98, but inadvertent omissions were made. These omissions have been corrected herein. Accordingly, additional time is requested so that this Supplemental IDS can be considered as if properly filed on _____.
- 8b. ☐ This Supplemental Information Disclosure Statement is timely filed within one (1) month of the Notice under 37 CFR § 1.97 and 1.98, mailed _____.
9. ☐ In accordance with 37 CFR § 1.98, a concise explanation of what is presently understood to be the relevance of each non-English language publication is:
(Check appropriate Items 9a, 9b, 9c and/or 9d)
- 9a. ☐ satisfied because all non-English language publications were cited on the enclosed "English language version of the search report or action which indicates the degree of relevance found by the foreign office". (See MPEP § 609, Minimum Requirements for an Information Disclosure Statement, Part A(3): Concise Explanation of Relevance, 8th Ed.)
- 9b. ☐ set forth in the application.
- 9c. ☐ satisfied because an English language translation (complete or relevant portion(s)) is attached to each non-English language publication.
- 9d. ☐ enclosed as Attachment 1(e), hereto.
10. No admission is made that the information cited in this Statement is, or is considered to be, material to patentability nor a representation that a search has been made (other than search report(s) from a counterpart foreign application or a PCT International Search Report, if submitted herewith). 37 CFR §§ 1.97(g) and (h).

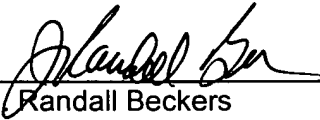
Serial No.:

11. The Commissioner is authorized to credit any overpayment or charge any additional fee required under 37 CFR § 1.17 for this Information Disclosure Statement to Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Dated: 4/23/4
1201 New York Ave., N.W., Suite 700
Washington, D.C. 20005
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By: 
J. Randall Beckers
Registration No. 30,358

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY DOCKET NO.	APPLICATION NO.
		1252.1054C	
		FIRST NAMED INVENTOR	
		Gordon P. KURTENBACH et al.	
LIST OF REFERENCES CITED BY APPLICANT (Use several sheets if necessary)		FILING DATE	GROUP ART UNIT
		April 23, 2004	2674

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA	6,115,028	9/5/2000	Balakrishnan et al.			
	AB	6,208,318	3/27/2001	Anderson et. Al.			
	AC	5,717,415	2/10/1998	Iue et al.			
	AD	4,160,973	7/10/1979	Berlin, Jr.			
	AE	4,134,104	1/9/1979	Karras			
	AF	6,049,317	4/2000	Thompson			
	AG	5,854,449	12/1998	Adkins			
	AH	5,767,854	6/1998	Anwar			
	AI	6,031,541	2/2000	Lipscomb			
	AJ	5,805,137	9/1998	Yasutake			
	AK	6,064,423	5/2000	Geng			

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)				TRANSLATION	
				YES	NO
	AL	W. Buxton and G.W. Fitzmaurice, "HMD's, Caves, and Chameleon: A Human-Centric Analysis of Interaction in Virtual Space," Computer Graphics, vol. 32, no. 4, 1998, pp. 64-68.			
	AM	M. Czernuszenko et al., "The ImmersaDesk and Infinity Wall Projection-Based Virtual Reality Displays," Computer Graphics, vol. 31, no. 2, 1997, pp. 46-49.			
	AN	D. Ebert et al., "Realizing 3D Visualization using Crossed-Beam Volumetric Displays," Comm. ACM, vol. 42, no. 8, 1999, pp. 101-107.			

EXAMINER	DATE CONSIDERED
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY DOCKET NO. 1252.1054C	APPLICATION NO.
LIST OF REFERENCES CITED BY APPLICANT <i>(Use several sheets if necessary)</i>		FIRST NAMED INVENTOR Gordon P. KURTENBACH et al.	
		FILING DATE April 23, 2004	GROUP ART UNIT 2674

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)			TRANSLATION YES NO	
	AO	M. Lucente, "Interactive Three-Dimensional Holographic Displays: Seeing the Future in Depth," Computer Graphics, May 1997, pp. 63-67.		
	AP	M. Sinclair, "The Haptic Lens," Proc. Siggraph 97, ACM Press, New York, 1997, p. 179.		
	AQ	T. Murakami and N. Nakajima, "Direct and Intuitive Input Device for 3D Shape Deformation," Proc. Computer- Human Interaction (CHI 94), ACM Press, New York, 1994, pp. 465-470.		
	AR	R. Balakrishnan et al., "The Rockin'Mouse: Integral 3D Manipulation on a Plane," Proc. Computer-Human Interaction (CHI 97), ACM Press, New York, 1997, pp. 311-318.		
	AS	G. Fitzmaurice, H. Ishii, and W. Buxton, "Bricks: Laying the Foundations for Graspable User Interfaces," Proc. Computer-Human Interaction (CHI 95), ACM Press, New York, 1995, pp. 442-449.		
	AT	S. Zhai, W. Buxton, and P. Milgram, "The 'Silk Cursor': Investigating Transparency for 3D Target Acquisition," Proc. Computer-Human Interaction (CHI 94), ACM Press, New York, 1994, pp. 459-464.		
	AU	B. Conner et al., "Three Dimensional Widgets," Computer Graphics, vol. 22, no. 4, 1992, pp. 121-129.		
	AV	G. Fitzmaurice et al., "An Exploration into Supporting Artwork Orientation in the User Interface," Proc. Computer-Human Interaction (CHI 99), ACM Press, New York, 1999, pp. 167-174.		
	AW	Ken-ichi Kameyama, et al., "Virtual Surgical Operation System Using Volume Scanning Display", Image Capture, Formatting, and Display, SPIE, vol. 2164, Medical Imaging 1994, pp. 146-154		
	AX	Michael Halle, "Autostereoscopic Displays and Computer Graphics", Computer Graphics, ACM SIGGRAPH, 31(2), May 1997, pp. 58-62.		
	AY	Gregg Favallora et al., "Volumetric Three-Dimensional Display System with Rasterization Hardware", SPIE, Vol. 4297A, Feb. 2001.		

EXAMINER	DATE CONSIDERED
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

FORM PTO-1449	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTORNEY DOCKET NO. 1252.1054C	APPLICATION NO.
LIST OF REFERENCES CITED BY APPLICANT <i>(Use several sheets if necessary)</i>		FIRST NAMED INVENTOR Gordon P. KURTENBACH et al.	
		FILING DATE April 23, 2004	GROUP ART UNIT 2674

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)			TRANSLATION YES NO	
	AZ	E. Sachs, A. Roberts and D. Stoops, "3-Draw: A Tool for the Conceptual Design of Three Dimensional Shape", IEEE Computer Graphics and Applications, January 1990.		
	BA	K. Kameyama and K. Ohtomi, "A Direct 3-D Shape Modeling System", IEEE, pp. 519-524		
	BB	J. Viega et al., "3D Magic Lenses", UIST 1996, Seattle, Washington, pp. 51-58		
	BC	K. Kameyama, K. Ohtomi and Y. Fukui, "Interactive Volume Scanning 3-D Display with an Optical Relay System and Multidimensional Input Devices", SPIE Vol. 1915 Stereoscopic Displays and Applications IV (1993), pp. 12-20.		
	BD	K. Kameyama and K. Ohtomi, "A Shape Modeling System with a Volume Scanning Display and Multisensory Input Device", Presence: vol. 2, No. 2, 1993, pp. 104-111.		
	BE	K. Kameyama and K. Ohtomi, "VR System Using Volume Scanning Display and Multi-Dimensional Input Device", ISMCR, November 1992, pp. 473-479.		
	BF	K. Kameyama, K. Ohtomi and Yukio Fukui, "A Virtual Reality System Using a Volume Scanning 3D Display", 1991.		
	BG	U.S. Patent Publication No. 2002/0008676, Miyazaki et al., published 1/24/2002		
	BH	PCT International Search Report, PCT/US03/02341, filed January 27, 2003, mailed August 8, 2003.		

EXAMINER	DATE CONSIDERED
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

ATTACHMENT 1(F)

LIST OF COPENDING APPLICATIONS	ATTORNEY DOCKET NO.	APPLICATION NO.
	1252.1054C	
	FIRST NAMED INVENTOR	
	Gordon P. KURTENBACH et al.	
	FILING DATE	GROUP ART UNIT
	April 23, 2004	2674

The following, prior-filed, copending U.S. patent application(s) is/are listed in accordance with the duty of disclosure provisions of 37 CFR § 1.56, so that the Examiner may consider same should he deem any thereof to be material to examination of the subject application. Pursuant to 37 CFR 1.98(a)(2)(iii), a copy of the identified copending application(s) is provided.

It is requested that the Examiner acknowledge his consideration of application(s) below-listed by initialing same in the space provided adjacent each such application and that the Examiner sign and date this form at the bottom thereof to confirm such consideration having been given.

This submission in no way represents an admission that any of the information listed herein constitutes prior art with respect to the subject application and unless and until such prior art status is established, this submission is not a request that the information presented herein be printed on the face of any patent issuing from the subject application in which this information is being filed.

U.S. PATENT APPLICATION DOCUMENTS

*EXAMINER INITIAL		U.S. SERIAL NO.	FILING DATE	NAME	ASSIGNEE
	1	10/183,966	6/28/02	Kurtenbach, et al.	Silicon Graphics, Inc.
	2	10/183,945	6/28/02	Fitzmaurice, et al.	Silicon Graphics, Inc.
	3	10/183,968	6/28/02	Fitzmaurice, et al.	Silicon Graphics, Inc.
	4	10/188,765	6/28/02	Balakrishnan, et al.	Silicon Graphics, Inc.
	5	10/183,944	6/28/02	Balakrishnan, et al.	Silicon Graphics, Inc.
	6	10/183,970	6/28/02	Kurtenbach et al.	Silicon Graphics, Inc.
	7				
	8				

EXAMINER	DATE CONSIDERED
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	

ATTACHMENT 1(g)

LIST OF ADDITIONAL SUBMITTED DOCUMENTS	ATTORNEY DOCKET NO.	APPLICATION NO.
	1252.1054C	
	FIRST NAMED INVENTOR	
	Gordon P. KURTENBACH et al.	
	FILING DATE	GROUP ART UNIT
	April 23, 2004	2674

The following document(s) is/are listed in accordance with the duty of disclosure provisions of 37 CFR § 1.56, so that the Examiner may consider same should he deem any thereof to be material to examination of the subject application. Pursuant to 37 CFR 1.98(a)(2)(iii), a copy of any identified co-pending application(s) is provided.

It is requested that the Examiner acknowledge his consideration of document(s) below-listed by initialing same in the space provided adjacent each such application and that the Examiner sign and date this form at the bottom thereof to confirm such consideration having been given.

This submission in no way represents an admission that any of the information listed herein constitutes prior art with respect to the subject application and unless and until such prior art status is established, this submission is not a request that the information presented herein be printed on the face of any patent issuing from the subject application in which this information is being filed.

U.S. PATENT DOCUMENTS

*EXAMINER INITIAL		DOCUMENT NO.	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
	AA						
	AB						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NO.	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION YES NO	
	AC							
	AD							

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, Etc.)

							TRANSLATION YES NO	
	AE	R. Balakrishnan et al., "User Interfaces for Volumetric Displays", 3/2001, (IEEE)						

EXAMINER	DATE CONSIDERED
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.</p>	